Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Biennial Regulatory Review – Amendment of	)	WT Docket No. 03-264
Parts 1, 22, 24, 27, and 90 to Streamline and	)	
Harmonize Various Rules Affecting Wireless	)	
Radio Services	)	

COMMENTS OF LUCENT TECHNOLOGIES INC.

Introduction

Lucent Technologies Inc. (Lucent) herein responds to the Commission's request for comments on proposed amendments to its Rules as described in the Notice of Proposed Rulemaking (NPRM) in the above referenced proceeding. Lucent confines its comments to the issue of Part 24 Power and Antenna Height Limits (Part 24.232(a)). Lucent is a major manufacturer of wireless infrastructure and supports the development of Rules that are clear, reasonable, and technology neutral.

Powerwave's Interpretation of Part 24.232(a) is Correct

Lucent is sympathetic to the Comments of Powerwave in Docket 02-310, in which Powerwave argues for clarification of Part 24.232(a), the Rule that defines limits on PCS transmitter power. Powerwave's interpretation of the Rule such that the limit of 1640 watts EIRP is defined on a per carrier basis – and not on total base station power – correctly reflects the Commission's previous clarification of the Rule and, importantly, the manor in which the Rule is used within the wireless industry.[1]

Indeed, Lucent builds its equipment and designs wireless networks for its customers using the limit on radiated power of 1640 watts EIRP per carrier. As Powerwave further suggests, it is therefore appropriate that, at a minimum, any limit on transmitter output power also be interpreted on a per carrier basis. To do otherwise would be inconsistent with the Commission's clarification and discriminatory to the use of Multi-Carrier Power Amplifiers (MCPAs).

Powerwave's additional argument that there is, in fact, little need for any requirement that limits transmitter output power has merit.[2] To the extent that the limit was established to support a proper "balance" between uplink and downlink such that the

[1] Docket 02-310, Comments of Powerwave, page 4,9
[2] Id., page 7

transmit power would not "outrun" the capabilities of the mobile transmitter, that need is satisfied by the inherent cell site design practices used by all wireless carriers. Clearly, it is in the operator's interest to provide a level of transmitter power that supports the necessary capacity and coverage, consistent with the ability of the mobile terminal to adequately communicate with its base station. Further, a requirement on maximum transmitter power is not necessary to control interference as interference levels are constrained by limits on radiated power or, more directly, by maximum out-of-band energy requirements.

However, Lucent does share the Commission's concern that elimination of the transmitter output power requirement and reliance on radiated electric field strength could be problematic. Specifically, the elimination of the transmitter output power requirement could demand that equipment certification be based on measurements of effective radiated electric field strength, which can be difficult to define and burdensome to perform. Rather, equipment certification is preferably based upon a simple measurement of transmitter output power, which can be performed in the laboratory and well controlled. Alternatively, Powerwave suggests that certification might be independent of any transmitter power limits, and based on compliance with out-of-band (spurious) emissions limits.[3] The Commission should consider Powerwave's suggestion.

A Revised Part 24.232(a) Should be Technology Neutral

Notwithstanding Powerwave's appropriate interpretation of the existing Rule, any formal change to Part 24.232(a) should be consistent with the Commission's continued support of technological neutrality within its Rules. Because current (and future) wireless technologies (GSM, CDMA2000, UMTS) support different numbers of carriers in a given licensed band, a rule that describes power limits on a per carrier basis would necessarily permit different radiated power levels, dependent upon the specific technology employed. A more appropriate requirement would define and limit power measured as a power spectral density (e.g., watts/MHz).

Conclusion

Lucent believes that Part 24.232(a) should be modified to specify limits on radiated power (EIRP) as a power spectral density defined, for example, as watts/MHz. Further, Lucent suggests that there is no need to explicitly limit, by Rule, the peak output power of the base station transmitter in order to effect a balanced cell site design. Rather, maximum transmitter output power would be implicitly controlled by limits on radiated power and by existing Commission Rules that control out-of-band emissions and limit human exposure to RF energy.

[3] Id., note 9

Respectfully submitted,

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